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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,398	02/28/2002	David A. Novak	TIMK 8111US	6739

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EXAMINER

RODRIGUEZ, PAMELA

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 11/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/085,398

Applicant(s)

NOVAK, DAVID A.

Examiner

Pam Rodriguez

Art Unit

3683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 17, 18 and 21-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1. 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Species A in Paper No. 3 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 17, 18, and 21-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 3.

NOTE: applicant had stated in his election response that Claims 22 and 23 also read on the elected species. However, these claims depend from non-elected Claim 21 and thus are not readable on the elected species. Thus, these claims have not been examined.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: element number 176 described as a collar on page 11 line 17 of the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. Claims 5-7 and 10-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In line 3 of Claim 5 and in line 3 of Claim 10, the term "the raceways" is indefinite. It is unclear which of the plurality of raceways previously claimed, either the inner raceways or the outer raceways, that applicant is referring to here.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5, 8, 9, 10, 13-16, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashberg.

Regarding Claim 1, Ashberg discloses a mounting for the road wheel of an automotive vehicle (see Figure 2) having most all the features of the instant invention including: a housing including a radial portion (see Figure 2 and the metal housing portion located just to the right of element 27) having front and back faces (see Figure 2 and the aforescribed radial portion, wherein the front face is readable as the side facing element 27 and the back face is readable as the opposite side of the radial portion furthest from element 27), an axial portion 28 formed integral with the radial

portion (via elements 23 and 22) and projecting beyond the front face of the radial portion (see Figure 2 and the front face description above), a bearing 20/21 located in at least a portion of the axial portion 28 of the housing (see Figure 2), a hub having a shaft 30 that extends into the bearing 20/21 so that the hub can rotate in the housing about an axis (see Figure 2 and column 2 lines 58 et al), wherein the hub also has a flange 25 which projects outwardly from the shaft 30 (see Figure 2) and is spaced from the front face of the radial portion of the housing (see Figure 2), a brake rotor attached to the flange 25 of the hub and having a drum 31 which surrounds the axial portion 28 of the housing and a disk 27 which is located along the radial portion (see Figure 2), and a park brake 32 mounted on the housing within the drum 31 and having a shoe (see Figure 2 and the shoe portion contacting the face of element 31).

However, Ashberg (in Figure 2) does not specifically disclose a service brake mounted on the radial portion of the housing having a caliper.

In Figure 1 of Ashberg, the same type of mounting for a road wheel of an automotive vehicle is shown, wherein a brake disk 6 is provided with a service brake mounted on a radial portion of the housing, wherein that service brake has a caliper.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the Figure 2 mounting of Ashberg with a service brake mounted on the radial portion having a caliper as disclosed by the Figure 1 drawing of Ashberg as this type of service brake and actuator are well known in the art and would provide an effective means of braking the wheel.

Regarding Claim 2, see Figure 2.

Regarding Claim 3, Ashberg, as modified, does not specifically show the radial portion of the housing having a cutout located outwardly from the axial portion, wherein the service brake is located within the cutout.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the radial portion of the housing of Ashberg, as modified, to include a cutout located outwardly from the axial portion to house the service brake as this type of arrangement would provide an adequate and compact space for the service brake assembly. Further applicant should note that Figure 1 of the Ashberg reference appears to show his service brake 8 already mounted in either a cutout or some other similar type structure on the radial portion of his housing.

Regarding Claim 4, see Figure 2, wherein at least the lower portion of the radial portion of the housing along its front face carries a mechanism for urging the shoe against the drum of the brake rotor (i.e., the backing plate of the shoe).

Regarding Claim 5, Ashberg, as modified, further discloses that the bearing 20/21 includes inboard and outboard outer raceways 20/21/22 carried by the axial portion 28 of the housing and inherently inboard and outboard inner raceways carried by the shaft 30 of the hub, the raceways all being inclined with respect to the axis (see Figure 2 and at least the portions of the raceways which house the rollers, wherein the grooves for the balls are readable as being inclined portions of the raceways), wherein the inner raceways are inclined in one direction and the outboard raceways are inclined in the opposite direction (see Figure 2 wherein at least the one set of raceways shown have inclined portions where the balls sit therein that would inherently be oppositely

inclined in the other set of raceways not shown in the drawing), and rolling elements 24 arranged in inboard and outboard rows (see Figure 2), with the rolling elements 24 of the inboard row being between the inboard raceways and the rolling elements of the outboard row being between the outboard raceways (see Figure 2).

Regarding Claim 8, Ashberg, as modified, does not disclose that the housing is a casting.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the housing of Ashberg, as modified, to be cast, as this type of manufacturing process is well known in the art. Casting, forging, or some other means of manufacturing a brake housing would provide a solid, durable, and effective means of protecting the braking components housed within its walls.

Regarding Claim 9, see Claims 1 and 8 above.

Regarding Claim 10, see Claim 5 above.

Regarding Claim 13, see the brake shoe of parking brake assembly 32 shown in Figure 2 mounted along at least a lower portion of the front face of the radial portion of the housing and radially outwardly from the segment of the axial portion 28 that projects beyond the front face, wherein the brake shoe is capable of moving radially outwardly.

Regarding Claim 14, see the brake rotor described in Claim 1 above and drum 31.

Regarding Claim 15, see disk 27.

Regarding Claim 16, see Claim 1 above.

Regarding Claim 19, see Claims 1 and 3 above.

Regarding Claim 20, see Figure 2 and the portion of the parking brake 32 backing plate which is formed integral with the radial portion.

7. Claims 6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashberg in view of Jovick.

Regarding Claims 6 and 11, Ashberg, as modified, discloses most all the features of the instant invention as applied above, except for a target wheel carried by the spindle of the hub and a sensor in the axial portion of the housing and presented toward the target wheel for producing a signal that reflects the angular velocity of the target wheel.

Jovick is relied upon merely for his teachings of a mounting for a road wheel of an automotive vehicle (see Figure 1) having a target wheel 58 carried by the spindle of a hub and a sensor 64 in an axial portion of a housing for the assembly and presented toward the target wheel 58 for producing a signal that reflects the angular velocity of the target wheel (see column 2 lines 22-34).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the mounting assembly of Ashberg, as modified, to include a target wheel and sensor assembly as taught by Jovick as a means of better regulating the braking of a vehicle. By providing such a sensor assembly, the brakes can be regulated according to the wheel speed and thus can provide better overall vehicle control, particularly in a "skid" situation.

Allowable Subject Matter

8. Claims 7 and 12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Colanzi et al., Kaneko, Abbruzzi et al., WO 98/58762 to Webb et al., and Kawamura all disclose mountings for vehicle wheels having bearing and raceway assemblies similar to applicant's.

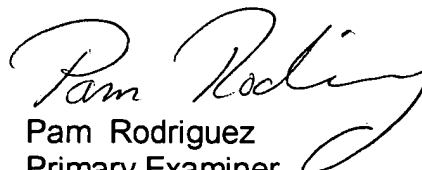
Cumming discloses a mounting for a vehicle wheel having a target wheel and sensor assembly within the housing similar to applicant's.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pam Rodriguez whose telephone number is 703-308-3657. The examiner can normally be reached on Mondays 6 am -4 pm and Tuesdays 6 am -12 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on 703-308-3421. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Art Unit: 3683

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.


Pam Rodriguez
Primary Examiner
Art Unit 3683
11/3/03

PR
11/03/2003